

24May05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's UDP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -u -w1m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>%packet-loss</u>
San Diego	Chicago	5.213+ Gbps	99	63	0
Chicago	San Diego	5.174+ Gbps	99	65	0.0005
Chicago	McLean	5.187+ Gbps	100	58	0
McLean	Chicago	5.557+ Gbps	98	71	0
San Diego	McLean	5.128+ Gbps	99	57	0
McLean	San Diego	5.544+ Gbps	100	64	0.0006

24May05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego*	Chicago	0.006+ Gbps	0	0
Chicago*	San Diego	0.006+ Gbps	0	0
Chicago*	McLean	0.030+ Gbps	0	0
McLean	Chicago	4.794+ Gbps	95	44
San Diego*	McLean	0.005+ Gbps	0	0
McLean	San Diego	0.445+ Gbps	8	3

*TCP Off-load Engine (TOE) turned on

26May05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's UDP-based tests between GSFC hosts with 1-GE NIC's, enabled by: nuttcp -u -w1m -Ri1g

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>%packet-loss</u>
GSFC	McLean	0.986+ Gbps	unk	8	0
McLean	GSFC	0.987+ Gbps	unk	8	0
GSFC	San Diego	0.987+ Gbps	unk	9	0
San Diego	GSFC	0.935+ Gbps	unk	7	0

26May05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 1-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
GSFC	McLean	0.988+ Gbps	11	11
McLean	GSFC	0.988+ Gbps	12	9
GSFC	San Diego	0.587+ Gbps	7	4
San Diego*	GSFC	0.005+ Gbps	0	0

*TCP Off-load Engine (TOE) turned on

27May05* throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's UDT-based tests between GSFC hosts with 10-GE NIC's, enabled by: appclient/appserver**

<u>From</u>	<u>To</u>	<u>Throughput</u>
San Diego	Chicago	2.789+ Gbps
Chicago	San Diego	3.284+ Gbps
Chicago	McLean	3.435+ Gbps
McLean	Chicago	2.895+ Gbps
San Diego	McLean	3.832+ Gbps (*3.832+ Gbps on 7Jun05)
McLean	San Diego	1.352+ Gbps (*2.855+ Gbps on 7Jun05)

- **Developed by Robert Grossman (UIC): <http://udt.sourceforge.net/>

15Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's UDP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -u -w1m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>%packet-loss</u>
San Diego	Chicago				
Chicago	San Diego				
Chicago	McLean				
McLean	Chicago				
San Diego	McLean	5.221+ Gbps	99	60	0
McLean	San Diego	5.563+ Gbps	98	66	0.0004

15Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego*	Chicago	0.006+ Gbps	0	0
Chicago	San Diego			
McLean	McLean			
Chicago	Chicago			
San Diego*	McLean	0.005+ Gbps	0	0
McLean	San Diego			

*TCP Off-load Engine (TOE) turned on

17Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: iperf -w30M

<u>From</u>	<u>To</u>	<u>Throughput</u>
San Diego*	Chicago	1.530+ Gbps
Chicago	San Diego	
Chicago	McLean	
McLean	Chicago	
San Diego*	McLean	0.970+ Gbps
McLean	San Diego	

*TCP Off-load Engine (TOE) turned off!

17Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego	Chicago	1.483+ Gbps	26	11
Chicago*	San Diego	0.006+ Gbps	0	0
Chicago*	McLean	0.030+ Gbps	0	0
McLean	Chicago	4.594+ Gbps	95	35
San Diego	McLean	1.806+ Gbps	29	26
McLean	San Diego	1.804+ Gbps	24	21

*TCP Off-load Engine (TOE) turned on

17Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's UDP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -u -w1m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>%packet-loss</u>
San Diego	Chicago	5.117+ Gbps	99	63	0
Chicago	San Diego	5.199+ Gbps	100	57	0
Chicago	McLean	5.164+ Gbps	100	64	0
McLean	Chicago	5.123+ Gbps	100	56	0
San Diego	McLean	5.164+ Gbps	99	60	0
McLean	San Diego	5.238+ Gbps	100	59	0

20Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: iperf -w20M

<u>From</u>	<u>To</u>	<u>Throughput</u>
San Diego	Chicago	1.490+ Gbps
Chicago	San Diego	1.490+ Gbps
Chicago	McLean	4.480+ Gbps
McLean	Chicago	3.320+ Gbps
San Diego	McLean	
McLean	San Diego	

20Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego	Chicago	2.226+ Gbps	36	27
Chicago	San Diego	2.225+ Gbps	36	24
Chicago	McLean	3.611+ Gbps	71	52
McLean	Chicago	3.622+ Gbps	67	43
San Diego	McLean			
McLean	San Diego			

17-20Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w10m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego	Chicago	2.226+ Gbps	36	27
Chicago	San Diego	2.225+ Gbps	36	24
Chicago	McLean	3.611+ Gbps	71	52
McLean	Chicago	3.622+ Gbps	67	43
San Diego	McLean	1.806+ Gbps	29	26
McLean	San Diego	1.804+ Gbps	24	21

21Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: iperf -w25M

<u>From</u>	<u>To</u>	<u>Throughput</u>
San Diego	Chicago	
Chicago	San Diego	
Chicago	McLean	4.310+ Gbps
McLean	Chicago	4.300+ Gbps
San Diego	McLean	
McLean	San Diego	

21Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w20m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>
San Diego	Chicago			
Chicago	San Diego			
Chicago	McLean	5.112+ Gbps	98	76
McLean	Chicago	5.114+ Gbps	98	55
San Diego	McLean			
McLean	San Diego			

21Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's,
enabled by: nuttcp -w<*>

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u><*></u>
McLean	Chicago	3.618+ Gbps	66	38	10m
		3.977+ Gbps	78	41	11m
		4.340+ Gbps	98	50	12m
		4.694+ Gbps	98	58	13m
		5.036+ Gbps	98	62	14m
		5.083+ Gbps	98	54	15m

29Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w80m*

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>*Actual</u>
San Diego	Chicago				
Chicago	San Diego				
Chicago	McLean				
McLean	Chicago				
San Diego	McLean	4.621+ Gbps	89	65	60 MB
McLean	San Diego	1.923+ Gbps	28	21	24 MB

29Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From George Uhl's 's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w80m*

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>*Actual</u>
San Diego	Chicago				
Chicago	San Diego	5.078+ Gbps	98	59	60 MB
Chicago	McLean				
McLean	Chicago				
San Diego	McLean	5.150+ Gbps	98	69	60 MB
McLean	San Diego	1.731+ Gbps	23	18	24 MB

30Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's TCP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -w<*>

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u><*>Actual</u>
San Diego	Chicago	4.763+ Gbps	91	51	60 MB
Chicago	San Diego	4.749+ Gbps	91	51	60 MB
Chicago	McLean	0.556+ Gbps	12	8	15 MB
McLean	Chicago	4.886+ Gbps	98	51	15 MB
San Diego	McLean	4.617+ Gbps	88	67	60 MB
McLean	San Diego	1.548+ Gbps	21	15	60 MB

30Jun05 throughput findings from GSFC's 10-Gbps networking efforts

From Bill Fink's UDP-based tests between GSFC hosts with 10-GE NIC's, enabled by: nuttcp -u -w1m

<u>From</u>	<u>To</u>	<u>Throughput</u>	<u>TmCPU%</u>	<u>RcCPU%</u>	<u>%packet-loss</u>
San Diego	Chicago	5.142+ Gbps	99	57	0
Chicago	San Diego	5.162+ Gbps	99	58	0
Chicago	McLean	5.146+ Gbps	100	61	0
McLean	Chicago	5.237+ Gbps	100	60	0
San Diego	McLean	5.054+ Gbps	99	60	0
McLean	San Diego	5.236+ Gbps	100	59	0